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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/479,186	01/07/2000	WAYNE DUPONT	P/3255-39	2743

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EXAMINER	
WALKENHORST, DAVID W	
ART UNIT	PAPER NUMBER
2831	

DATE MAILED: 02/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/479,186	DUPONT ET AL.	
	Examiner	Art Unit	
	W. David Walkenhorst	2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 January 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-10 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Birkelund et al. (US 5,362,921) in view of Carroll (US 5,061,823).

Regarding claim 1, Birkelund et al. discloses an umbilical comprising a plurality of steel tubes (3) helically wound around a core (1); but does not disclose at least one substantially solid steel rod helically wound around said core, said steel rod being arranged in a void between said steel tubes. Birkelund et al. also does not disclose said substantially solid steel rod being shaped and sized for absorbing tensile loading on said umbilical. Carroll teaches a solid steel rod (6) helically wound around a core (see

col. 3, lines 47-56). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a helically wound steel rod to the umbilical of Birkelund et al. for the purpose of increasing the crush and torque resistance of the line, as taught by Carroll in col. 3, lines 47-50. Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made to arrange the steel rod in a void between the steel tubes, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japiske*, 86 USPQ 70. Finally, it would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the size and shape of the steel rod based on the intended application, since such a modification would have involved a mere change in the size and shape of a component. A change in size of a component is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955), and more than a mere change of form is necessary for patentability. *In re Span-Deck Inc. v. Fab-Con, Inc.* (CA 8, 1982) 215 USPQ 835.

Regarding claim 2, Birkelund et al. as modified by Carroll above further discloses at least one elongated umbilical element selected from the group consisting of thermoplastic tubes, optical fiber cables, and electrical power and communications cables (see Birkelund et al. col. 1, lines 61-65).

Regarding claim 3, Birkelund et al. as modified by Carroll above further discloses a non-metallic outer sheath (6) surrounding and in direct contact with at least some of said plurality of steel tubes and said elongated umbilical elements (see Birkelund, Figure 1).

Regarding claim 4, Birkelund et al. discloses an umbilical comprising a plurality of steel tubes (3) helically wound around a core (1), at least one elongated umbilical element selected from the group consisting of thermoplastic tubes, optical fiber cables, and electrical power and communications cables (see Birkelund et al. col. 1, lines 61-65), a non-metallic outer sheath (6) surrounding and in direct contact with at least some of said plurality of steel tubes and said elongated umbilical elements (see Birkelund, Figure 1); but does not disclose at least one substantially solid steel rod helically wound around said core, said steel rod being arranged in a void between said steel tubes. Birkelund et al. also does not disclose said substantially solid steel rod being shaped and sized for absorbing tensile loading on said umbilical. Carroll teaches a solid steel rod (6) helically wound around a core (see col. 3, lines 47-56). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a helically wound steel rod to the umbilical of Birkelund et al. for the purpose of increasing the crush and torque resistance of the line, as taught by Carroll in col. 3, lines 47-50. In this modification, the steel rod would be in contact with the non-metallic outer sheath. Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made to arrange the steel rod in a void between the steel tubes, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japiske*, 86 USPQ 70. Finally, it would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the size and shape of the steel rod based on the intended application, since such a modification would have involved a mere change in the size and shape of a component. A change in size of a component

is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955), and more than a mere change of form is necessary for patentability. *In re Span-Deck Inc. v. Fab-Con, Inc.* (CA 8, 1982) 215 USPQ 835.

Regarding claim 5, Birkelund et al. as modified by Carroll above further discloses that said at least one steel rod is made of solid steel (see Carroll col. 3, lines 50-52).

Regarding claim 6, Birkelund et al. discloses a method comprising a plurality of steel tubes (3) helically wound around a core (1) so as to increase the hydrodynamic stability of the umbilical, but does not disclose that said method comprises the step of arranging at least one substantially solid steel rod in a void between said steel tubes and helically wound around said core, said substantially solid steel rod being shaped and sized for absorbing tensile loading on said umbilical. Carroll teaches a solid steel rod (6) helically wound around a core (see col. 3, lines 47-56). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a helically wound steel rod to the umbilical of Birkelund et al. for the purpose of increasing the crush and torque resistance of the line, as taught by Carroll in col. 3, lines 47-50. Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made to arrange the steel rod in a void between the steel tubes, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japiske*, 86 USPQ 70. Finally, it would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the size and shape of the steel rod based on the intended application, since such a modification would have involved a mere change in the size and shape of a component. A change in size of a component

is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955), and more than a mere change of form is necessary for patentability. *In re Span-Deck Inc. v. Fab-Con, Inc.* (CA 8, 1982) 215 USPQ 835.

Regarding claim 7, Birkelund et al. as modified by Carroll above further discloses the step of helically winding around said core at least one elongated umbilical element selected from the group consisting of thermoplastic tubes, optical fiber cables, and electrical power and communications cables (see Birkelund et al. col. 1, lines 61-65).

Regarding claim 8, Birkelund et al. as modified by Carroll above further discloses the step of placing a non-metallic outer sheath (6) surrounding and in direct contact with at least some of said plurality of steel tubes and said elongated umbilical elements.

Regarding claim 9, Birkelund et al. discloses a method comprising a plurality of steel tubes (3) helically wound around a core (1) so as to increase the hydrodynamic stability of the umbilical, but does not disclose that said method comprises the steps of arranging at least one substantially solid steel rod in a void between said steel tubes and helically wound around said core, helically winding at least one elongated umbilical element selected from the group consisting of thermoplastic tubes, optical fiber cables, and electrical power and communications cables (see Birkelund et al. col. 1, lines 61-65), placing a non-metallic outer sheath (6) surrounding and in direct contact with at least some of said plurality of steel tubes and said elongated umbilical elements (see Birkelund, Figure 1). Carroll teaches a solid steel rod (6) helically wound around a core (see col. 3, lines 47-56). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a helically wound steel rod to the umbilical of

Birkelund et al. for the purpose of increasing the crush and torque resistance of the line, as taught by Carroll in col. 3, lines 47-50. In this modification, the steel rod would be in contact with the non-metallic outer sheath. Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made to arrange the steel rod in a void between the steel tubes, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japiske*, 86 USPQ 70. Finally, it would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the size and shape of the steel rod based on the intended application, since such a modification would have involved a mere change in the size and shape of a component. A change in size of a component is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955), and more than a mere change of form is necessary for patentability. *In re Span-Deck Inc. v. Fab-Con, Inc.* (CA 8, 1982) 215 USPQ 835.

Regarding claim 10, Birkelund et al. as modified by Carroll above further discloses the step of making said at least one steel rod of solid steel (see Carroll, col. 3, lines 50-52).

Regarding claims 12 and 13, Birkelund et al. as modified by Carroll above discloses all of the limitations of claims 4 and 9 above, but does not disclose that the substantially solid steel rod is shaped and sized for absorbing tensile loading one said umbilical. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the size and shape of the steel rod based on the intended application, since such a modification would have involved a mere change in the size

and shape of a component. A change in size of a component is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955), and more than a mere change of form is necessary for patentability. *In re Span-Deck Inc. v. Fab-Con, Inc.* (CA 8, 1982) 215 USPQ 835.

4. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Birkelund et al. in view of Carroll as applied to claim 6 above, and further in view of Specification for Subsea Production Control Umbilicals (API).

Regarding claim 11, Birkelund et al. as modified by Carroll further discloses all of the limitations of claim 6 above, but does not disclose at least one plastic filler helically wound around said core with said steel tubes. API teaches the use of plastic fillers in umbilicals (see API, col. 2, lines 11-13). API also teaches that filler material should be selected with consideration of the crushing forces due to manufacture, installation and service (see API, pg. 12, col. 2, lines 7-10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include at least one plastic filler helically wound around said core with said steel tubes for the purpose of strengthening the umbilical.

Response to Arguments

5. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Head is cited to show an underwater cable with steel rods, similar to applicant's claimed invention.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to W. David Walkenhorst whose telephone number is (703) 306-5402. The examiner can normally be reached on Mon-Thurs. 7:30AM-5:00PM, alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on (703) 308-0956. The fax phone numbers

for the organization where this application or proceeding is assigned are (703) 305-1341 for regular communications and (703) 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Walkenhorst:wdw
January 29, 2002

Dean A. Reichard 2/5/02

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